

REMARKS

Claims 1-20 are pending, with claims 1, 7, 14, 15, and 16 being independent.

The Office Action dated February 5, 2008 rejected claims 1-2, 7-8, and 14-15 under 35 U.S.C. § 103(a) as being unpatentable over Garrido, “A Comparative Study of Two Adaptive Continuous-Time Filters for Decision Feedback Equalization Read Channels,” in view of Cranford, U.S. Patent No. 5,940,441. Applicant respectfully submits that these rejections were improper because, without conceding that the combination of Garrido and Cranford disclose all the elements of the claims, modifying the forward equalizer of Garrido by using a continuous time filter as disclosed in Cranford would cause the forward equalizer of Garrido to not work for its intended purpose.

Claim 1 recites, in part, “a continuous time filter having an adjustable bandwidth...and a bandwidth controller configured to...adjust the bandwidth of the continuous time filter”. As stated in the Office Action, the forward equalizer of Garrido does not have an adjustable bandwidth, and the error signal e_k estimated by the current summing node is not a bandwidth error. The Office Action asserts that “[o]ne skilled in the art would have been motivated to employ a continuous time filter having an adjustable bandwidth in order to compensate for loss and distortions of the output signal (column 2 lines 40-46).” Applicant disagrees.

The bandwidth control signal of Cranford is designed to compensate for loss and distortion caused by a cable and semiconductor process variations. Cranford, column 2, lines 40-46, column 4, lines 21-28. Garrido, in contrast, uses equalizers for errors on magnetic disk read channels. Garrido, Abstract. The background of Cranford indicates that compromise fixed equalizers employed to compensate the channel in both cables and magnetic storage channels degrade at short and long cable lengths, and degrade with fluctuations in the magnetic read channel. Cranford, column 1, lines 29-39. Cranford is therefore directed toward a cable equalizer that compensates for variations caused by distortion in the cable and process tolerances of components in an integrated circuit. Cranford, column 1, line 65 to column 2, line 2.

Any bandwidth control signal that may be disclosed by Cranford is used to compensate for loss and distortion caused by a cable. The forward equalizer of Garrido is an *allpass filter*. Garrido, Abstract, paragraph between “Orthonormal Structure” heading and Fig. 3, Conclusions. An allpass filter may not have an adjustable bandwidth because its bandwidth is by definition

infinite. Garrido specifically relies upon an allpass filter in the forward equalizer; an “adjustable bandwidth” would limit the bandwidth of the forward equalizer, thereby limiting the functionality of the forward equalizer, and causing it to not work for its intended purpose.

Therefore, one skilled in the art would not have been motivated to modify Garrido by providing the forward equalizer with an adjustable bandwidth, because doing so would limit the functionality of the decision feedback equalization read channel described in Garrido.

Accordingly, Applicant respectfully submits that the rejection of claim 1 based on Garrido and Cranford was improper, and requests that the rejection be withdrawn.

Applicant respectfully submits that the combination of Garrido with Cranford was improper, and requests that the § 103 rejections of claims 2-5 be withdrawn at least due to their dependence on claim 1. Applicant further requests that the rejection of independent claims 7, 14, 15, and 16 be withdrawn for the reasons discussed with reference to claim 1, and that the rejections of claims 8-11, 13, and 17-19 be withdrawn at least due to their dependence on claims 7 and 16.

ALLOWABLE SUBJECT MATTER

Applicant appreciates the Examiner's indication of allowability regarding claims 6, 12, and 20. Applicant will address these claims when the outstanding rejections have been resolved.

Conclusion

Applicant believes that all pending claims are in condition for allowance and respectfully requests notification to that effect. The Examiner may telephone Applicant's attorney (208-286-1013) to facilitate prosecution of this application. If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 50-3521, referencing Attorney Docket No. 0033-095001.

Respectfully submitted,

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